



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,094	01/22/2004	Mark Elliott Hack	AUS920031030US1	6053
35525	7590	04/30/2007	EXAMINER	
IBM CORP (YA)			WANG, ALBERT C	
C/O YEE & ASSOCIATES PC				
P.O. BOX 802333			ART UNIT	
DALLAS, TX 75380			PAPER NUMBER	
			2115	
			MAIL DATE	
			DELIVERY MODE	
			04/30/2007	
			PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/763,094

Applicant(s)

HACK, MARK ELLIOTT

Examiner

Albert Wang

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office action is responsive to the amendment filed 5 February 2007.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 recites the limitation "the set of processors" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim 25 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship between "a set of instructions" in line 3 and "a set of instructions" in line 4; and the relationship between "a processing unit" in line 4 and "a selected processor" in line 5.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 17-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 17 is directed to a computer program product in a

Art Unit: 2115

computer readable medium that, as defined by the specification (page 20, lines 21-30), includes transmission-type media. Transmission-type media is a form of energy, like a signal. It does not resolve whether the computer program product is executable. Claims 18-24 depend on claim 17.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouchier et al., U.S. Patent No. 6,918,052 (hereinafter "Bouchier"), in view of Ginsberg, U.S. Patent No. 7,137,117.

As per claim 1, Bouchier teaches a method in a multi-partitioned data processing system for managing a set of processors (figs. 1-3, multi-partitioned data processing system with CPUs 302), wherein a plurality of different operating systems are each executing in a respective partition (col. 4, lines 25-37; col. 4, line 58 – col. 5, line 2).

Bouchier does not expressly teaches the method comprising receiving a call from an operating system, wherein the call indicates that a selected processor in the set of processors is unneeded for a period of time that is included in the call from the operating system, and altering operation of the selected processor to reduce power usage during the period of time. According to Ginsberg, altering the operation of a processor for a period of time to save power in response to an operating system call is well known in the art (col. 2, lines 38-45). Ginsberg teaches including a variable idle time in the operating system call, and altering operation of a processor

Art Unit: 2115

to reduce power during the variable idle time (col. 4, lines 54-64; col. 5, lines 22-51). Ginsberg's variable idle time may be applied to various configurations of data processing systems (col. 6, lines 51-61). At the time of the invention, it would have been obvious to one of ordinary skill in the art, that Ginsberg's variable idle time may be determined by an operating system in a respective partition of Bouchier's method to alter the operating of a selected processor according to the variable idle time. A motivation for doing so would have been optimize performance without increasing power consumption (Ginsberg, col. 3, lines 20-24).

As per claim 2, Bouchier teaches the method of claim 1, wherein the call is a sub-processor partitioning call sent from one of a plurality of different operating systems, where each partition of the multi-partitioned data processing system (i) is assigned a non-overlapping subset of resources of the data processing system and (ii) can be individually booted and shut down without having to power-cycle entirety of the data processing system (col. 4, lines 25-37; col. 4, line 58 – col. 5, line 2; col. 8, lines 38-48; col. 9, lines 38-61).

As per claim 3, Ginsberg teaches the method of claim 1, wherein the period of time is a time during which idle cycles are present for the selected processor (col. 5, lines 22-51).

As per claim 4, Ginsberg teaches the method of claim 1, wherein the selected processor is in an original state prior altering operation of the selected processor and further comprising: returning the selected processor to the original state after the period of time has elapsed (col. 6, lines (col. 6, lines 32-40). Official notice is taken that maintaining context during a low power state is well known in the art.

As per claim 5, Ginsberg teaches the method of claim 4 further comprising: returning the selected processor to the original state if the period of time has not elapsed and an external interrupt indicating work is present for the selected processor is received (col. 5, lines 52-67).

As per claim 6, Ginsberg teaches the method of claim 1 wherein the receiving step and the altering step are performed by a runtime abstraction layer (col. 4, lines 54-64).

As per claims 7 and 8, Official Notice is taken that reducing a clock speed of the selected processor (often referred to as frequency scaling or clock throttling) and placing the selected processor in a sleep mode (e.g. ACPI processor sleeping states) are a well known means for to reducing power consumption.

As per claims 9-24, since Bouchier/Ginsberg teaches the method of claims 1-8, Bouchier/Ginsberg teaches the claimed data processing system and computer program product.

As per claim 25, Bouchier teaches a multi-partitioned data processing system (figs. 1-3, multi-partitioned data processing system), wherein a plurality of different operating systems are each executing in a respective partition (col. 4, lines 25-37; col. 4, line 58 – col. 5, line 2), the data processing system comprising:

- a bus system (cell bus system);

- a memory connected to the bus system, wherein the memory includes a set of instructions (cell system memory includes set of instructions for CPUs); and

- a processing unit connected to the bus system, wherein the processing unit executes a set of instructions (one of CPUs 302).

Bouchier does not expressly teach receiving a call from an operating system, wherein the call indicates that a selected processor in a set of processors is unneeded for a period of time as specified in the call from the operating system; and altering operation of the selected processor to reduce power usage during the period of time. According to Ginsberg, altering the operation of a processor for a period of time to save power in response to an operating system call is well known in the art (col. 2, lines 38-45). Ginsberg teaches including a variable idle time in the operating system call, and altering operation of a processor to reduce power during the variable idle time (col. 4, lines 54-64; col. 5, lines 22-51). Ginsberg's variable idle time may be applied to various configurations of data processing systems (col. 6, lines 51-61). At the time of the invention, it would have been obvious to one of ordinary skill in the art, that Ginsberg's variable idle time may be determined by an operating system in a respective partition of Bouchier's method to alter the operating of a selected processor according to the variable idle time. A motivation for doing so would have been optimize performance without increasing power consumption (Ginsberg, col. 3, lines 20-24).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Wang whose telephone number is 571-272-3669. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2115

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AW



**CHUN CAO**  
**PRIMARY EXAMINER**